

Study Guide

For use with pages 16–20

EXAMPLE 3 Powers in Real-World Problems

A checkerboard has 8 columns and 8 rows of play squares. How many play squares does the checkerboard contain? Write your answer as a power. Then find the value.

Solution

$$\begin{array}{ccc} 8 & \times & 8 = 8^2 = 64 \\ \uparrow & & \uparrow \\ \text{columns} & & \text{rows} \end{array}$$

Answer: The checkerboard contains 64 play squares.

Exercises for Example 3

13. You need to contact members of your marching band. You call 5 members after school. Those 5 members each call 5 more members by dinnertime. That evening, those additional members each call 5 others. How many band members are called that evening? Write your answer as a power. Then find the value.
14. A man and his wife had 3 children. Each child grew up, got married, and had 3 children of their own. Each of those children also grew up, got married, and had 3 children. How many great-grandchildren did the original couple have? Write your answer as a power. Then find the value of the power.
15. A state governor wants to invite some students to a luncheon. He chooses 2 school districts and selects 2 schools from each district. The principal from each of the schools selects 2 teachers and each teacher selects 2 students to go to the luncheon. How many students will attend the luncheon? Write your answer as a power. Then find the value of the power.